10-1980

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Recommended Citation

Carol Tenopir. "Evaluation of Library Retrieval Software." In Communicating Information, Proceedings of the 43rd American Society for Information Science Annual Meeting, Anaheim, CA, October 5-10, 1980: Pp. 64-67.

EVALUATION OF LIBRARY RETRIEVAL SOFTWARE

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Abstract. Many libraries in the near future will be considering purchase of software packages for online retrieval systems. Many of the librarians responsible for the selection of a package will have little experience in the development of software. Guidelines for software evaluation by a librarian with a limited automation background are given.

INTRODUCTION

In the past two years the number of commercially available software packages for online retrieval systems has greatly increased. In the next few years the number of such packages will continue to grow. Many libraries that formerly would have planned development of an in-house system, or that would not have been able to consider an online retrieval system at all, will now be evaluating these software packages for possible purchase. Librarians who will be responsible for this evaluation may have limited experience in choosing and evaluating software packages. They may be very accomplished users of existing data bases and various automated systems, but many will have never worked directly on software development. Following is criteria for evaluating library retrieval software packages by the librarian with limited computer expertise.

ASSESSING NEEDS

Before any evaluation of specific products can take place, the librarian must evaluate exactly the library's needs. The exercise of identifying the library's needs and determining specifications to meet these needs is the best way to formulate specific questions to be asked, to communicate needs to the vendor, and to ensure that a software package will be able to deliver all the things expected.

Whether formal specifications are required by the parent organization or not, they should be developed as a first step. This step should address both general and specific library requirements and answer the questions listed below.

--Why is a new system desired and needed?

--What old system is present and how will the new system replace or interact with it?

--How will the new system affect other library functions?

--Ideally, what will the new system do? (Be detailed and specific.)

--Do you have special requirements which must be met? (eg., need for special characters like the ALA print train, MARC compatibility?)

--What things must the system do and what would be nice, but are not required features? (Detail and rank all features.)

--What will the system look like in 1 year? In 5 years? In 10 years?

--Who will be the primary users of the system? Will a librarian serve as an interface or will end users be the primary target?

--Should access be available in one location only, in multiple locations throughout one facility, or in multiple facilities?

--What is the expected size of the data base and how fast will it grow?

--What management, personnel, and data processing support will there be for the system?

--What is a reasonable and acceptable price range?

The initial step should also address data processing requirements.

--What hardware is presently available in-house? What is its capacity, its operating systems, its future in the organization?

--Is new hardware necessary or feasible? Would the data processing department prefer to purchase hardware compatible with a company-wide plan or is purchase of a hardware/software package by the library possible?

--What programming languages are currently supported or will be supported in the future?

--Will the data processing staff be involved in this project? What priority will it have with them? Have they worked with the library before?

--Do heavy demands on the computer and shifting priorities pose a threat to the library's use of the in-house hardware and personnel?

Once the needs and requirements of the library have been identified, it is time to identify specific software packages on the market and to evaluate them for the application. Figure 1 outlines and summarizes the general areas of evaluation which are discussed in more detail below. Each software package under consideration is evaluated on a separate form.

A rating of "Poor or Not Avail." is used when a feature is of poor quality or some needed feature is not available with this package. "OK or Acceptable" is used either to rate a feature which meets the minimum standards or when a feature which is not available is not required for your application. Good is used when features exceed minimum requirements. Evaluative comparisons can then be made, leading to the choice of the most satisfactory package.

VENDOR OR PRODUCER

A basic concern when evaluating a software package is the creator and marketing agency of this package. Questions to be addressed include:

--Does the vendor or producer have a reputation for reliability, responsiveness, and quality?

--Are they primarily a library-focused agency or a general software house? (Libraries have unique requirements of which non-library focused companies are often unaware and communication with them may be more difficult.)

--What other products have they developed? Are these products still in use and can you talk to people who are using them? Do they rate the products and the firm highly?

--How many information centers have purchased their retrieval package? (For a new product this may not be as important if the company rates highly in other areas.) What do these other information centers say about the package? How do their needs and size compare to your application?

--What kind of support services are offered? (e.g., installation on your computer, debugging, conversion services, etc.)

--Are they geographically located so they can be responsive to your questions or problems?

--Are they easy to reach with questions? When you call can someone there answer your questions immediately?

--Do you feel good about the firm and their salespeople? Are they responsive to your questions? Do they try to put things in your own terms? Do they really know the product? Are they familiar with similar products offered by other firms?

SYSTEM OUTPUT

Essential to any system is output--what the user and the library will receive from the system in response to queries. Both online display and printed listing capabilities must be examined with the following guidelines:

--Is the display format easy to understand and read?

--Can the display format be custom tailored? (e.g., full record or specified partial record?)

--Are printed lists and reports available as well as an online display? (e.g., acquistions lists, thesauri, custom tailored holdings lists)

--Are statistical reports generated when needed? Can other kinds of statistics be generated if needed? (e.g., new titles added, total number of volumes and titles, etc.)

--Can a tape be generated as output? (Can be used for COM catalog.)

SYSTEM INPUT

How information is to be entered into the retrieval system, both as an initial building process and as an ongoing procedure, must be carefully evaluated answering the following questions:

--Can OCLC or MARC tapes be used as input if this is your requirement?

--Can you choose the input means--direct key to disk or key to tape, OCR, etc., and can several methods be used? (You may want to convert existing cataloging using OCR or tapes, but will probably want to enter new information directly at the terminal.)

--Are the procedures for adding new items easy and are commands easy to remember? Does the online format prompt input?

--Are there built-in safeguards which tell you if an input error is made?

--Are newly input items identifiable?

--Can deletions of entire records or partial records be easily made? Additions and changes also?

--Is the user able to specify record structure to meet any specific needs? Are records variable length and is the format free?

SEARCHING

The user must be able to easily locate items in the data base or the system is virtually worthless.

--Is the query language easy to learn and easy to use?

--Is there a beginning user format that explains commands in detail and an experienced user format which bypasses lengthy explanations?

--If improper search language or commands are used does the system respond with intelligible error messages and provide alternative actions?

--Is a thesaurus available online? Available in hard copy?

--Can all fields be search without specifying fields? Can a distinction be made between fields if desired?

--Can terms be combined in logical AND, OR, NOT combinations?

--Can most users perform a simple search (finding a book by author, title, or a single subject) with no librarian interface?

SECURITY

The security of information in an online catalog must be considered from the following angles:

--Are there different levels of passwords for different classes of users?

--Can the system be used in a search-mode with no password?

--If no passwords are needed by browsers, is the database secure from alteration by unauthorized users? (ie. passwords required to add new information or edit existing information.)

--Is it so difficult to logon that use is prohibitive?

--Are there automatic backup systems for newly added materials? For editing? For the data base as a whole?

--Can usage be tracked?

TRAINING

The level and quality of training available should also be considered before purchase of a system.

--Are online training lessons available?

--Are some training features incorporated into the query language?

--Are sufficient and clear documentation and training manuals available? Are they available for users, librarians, and data processing staffs?

--Are training classes for both the library staff and the data processing staff available? Are these classes available at your facility?

--Can the uninitiated user learn to use the system with online instructions? With short written lessons? Or are detailed lessons needed?

EQUIPMENT

Costs and features of computers, terminals and peripherals vary considerably and must be examined.

--If hardware is to be purchased or leased with the system: is it covered by a sufficient warranty? Is someone in-house familiar with it? What does the literature and your data processing department say about the hardware? Are special facilities required? Will you get a trade-in benefit when better hardware becomes available?

--How will you handle downtime? What is available as a backup and is this backup automatic? Is there a service department that can answer your questions immediately and service personnel who will come on site quickly?

--What are ongoing costs for maintenance and/or lease?

--Are special terminals required? If so, are they readily available and does the cost compare with other terminals?

--Can the system be accessed by dial-up access as well as by terminals directly wired to the system?

--How many terminals can the system support? Can more be added in the future?

--What is the normal response time? How does peak use affect the response time?

--Are peripherals needed now? Can they be added to the system if needed? How will they be billed?

OTHER CONSIDERATIONS

--What size of data base can the system handle? What sizes are operating now and are there any upward limits?

--Are all costs available and relatively steady? Are there hidden costs monthly or yearly?

--Is the total cost competitive and within your projected budget?

--If you have done a cost analysis of your present system, how do these costs compare in 1 year? In 5 years? In 10 years? (Remember your automated system will likely be performing services not now offered and not figured into your existing costs.)

CONCLUSION

Librarians must consider all aspects of a retrieval package before purchase. Discussions with the in-house data processing staff, with

users of various systems, and with a variety of vendors is helpful and necessary. The final decision about which system to purchase should be made by evaluating all systems by the same criteria, however. Coupled with an evaluation of the library's needs, this evaluative comparison will provide a framework for a decision.

Figure 1 SOFTWARE EVALUATION FORM

	POOR/NOT AVAIL.	OK/ACCEPT-ABLE	GOOD		POOR/NOT AVAIL.	OK/ACCEPT-ABLE	GOOD
VENDOR/PRODUCER				SECURITY			
Reputation				Levels of passwords			
Library knowledge				Security from alteration			
Other products				Log on procedures			
Users of this product				Back-up systems			
Response to this product				Usage tracking			
				TRAINING			
Support services				Online training lessons			
Geographic location				Query language			
				Documentation			
Accessibility by phone				Training classes			
Your reactions				Ease of learning			
SYSTEM OUTPUT				EQUIPMENT			
Display format				Hardware warranty			
Customizing features				Hardware reliability			
Printed lists				Trade-in benefits			
Statistical reports				Downtime procedures			
Tape generation				Back-up procedures/features			
SYSTEM INPUT				Service			
Special input				Ongoing costs			
Variety of input means				Terminals			
Ease of procedures/ commands				Dial-up access			
Ident. of new input				Number of terminals			
Ease of deletions, adds, changes				Response time			
Flexibility of format				Other peripherals			
				OTHER CONSIDERATIONS			
SEARCHING				Size capabilities			
Query language				Clarity of costs			
User formats				Cost comparison with other systems			
Error messages							
Thesaurus				Cost comparison with existing system			
All fields searchable							
Distinction among fields							
Logical combinations							
Simple searching							